STATION: Corbin Repeater (HWY727)
CUSTOMER: South Central Bell
TOWER TYPE: SP-1 Self Supporter 261'
DATE OF INSPECTION: 5-17-94
INSPECTOR: Lane Johnson
CREW: Randy St. Denny

Minerich, Inc.

MAINTENANCE AND INSPECTION REPORT

1905 Barnes Mill Road
P.O. Box 98
Richmond, Kentucky 40475
Phone: (606) 623-0024

Engineers Contractors
Communications Systems

MINERICH, INC.
MAINTENANCE/INSPECTION REPORT

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CERTIFICATION

It is the supervisor's responsibility to ensure that all the procedures used (plumb/tensioning) comply with the requirements for this project and to ensure that safe and correct practices are maintained during maintenance and inspection work.

1]. This certifies that all the information entered herein is correct to the best of my knowledge and that all items noted by [X] have been **corrected** or explained on page 11 notes for reasons for **not correcting,** and that the customer's representative has been informed of major problems that require authorization to correct.

Lane Johnson SIGNED

CUSTOMER'S REPRESENTATIVE:

MINERICH, INC. SUPERVISOR/INSPECTOR
PRINT NAME: Lane Johnson

2] Report reviewed and recorded. Rob E. Minerich

MINERICH INC. PROJECT MANAGER
PRINT NAME: Rob E. Minerich

3] Date of last inspection.

MINERICH, INC.
MAINTENANCE/INSPECTION REPORT

STATION: Corbin Repeater (Hwy 727)

SUMMARY

[1] TOWER STRUCTURE

1. G Sections
2. G Angles/Members
3. G Splices
4. G Bolts/Nuts/Filler plates
5. N/A Guy Pulloffs
6. N/A Torque Stabilizers
7. G Ladder
8. X Safety Climb Device
9. G Step Bolts (on beacon mount)
10. X Lightning Rod
11. G Foundations
12. G Galvanizing/Rust/Flaking
13. G Tower Grounding

[2] TOWER SUPPORT SYSTEM – N/A

1. Tower Plumbness
2. Guy Tensions
3. Guy Attachments
4. Guy Anchors
5. Anchor Grounding
6. Anchor Fence/Guard Posts

[3] PAINTING

1. 7 Number of Bands
2. G Condition of Paint
3. G Surface Coverage

[4] SITE

1. X Access Road
2. N/A Access Gate/s
3. G Shelter Fence
4. G Shelter
5. G General Site Conditions

[5] ELECTRICAL

1. ✓ Relamped
2. G Operation
3. X Beacon
4. G Sidelights
5. G Conduit
6. G Junction Boxes
7. G Supports

[6] WAVEGUIDE

1. N/A Eliptical
2. G Rigid
3. G Co-Axial
4. G Spacing
5. X Supports
6. G Waveguide Bridge
7. G Building Entry
8. G Pressure
9. G Ice Protection
10. N/A Bullet Protection
11. N/A Grounding

[7] ANTENNAS

1. NA Parabolic [ ]
2. G Horns [3]
3. NA Reflectors [ ]
4. G Two Way [ ]
5. X Mounts
6. G Stiffarms
7. NA Antenna Ice Protection
8. NA Feedhorn Ice Protection
9. NA Grounding

Legend:
[G]--Good [X]--See Notes [N]--Not Applicable

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[1] TOWER STRUCTURE

GUYED ______

SELF SUPPORTING SP-1 261'

OTHER ______

1. Check sections for damage or distortion

   G

2. Check angles and members for damage, distortion and missing steel

   G

3. Check splices

   G

4. Check bolts for tightness (Torque Wrench)

   G - TIGHTENED A FEW BOLTS AT SPLICES; TIGHTENED A FEW PAL NUTS.

5. Check guy pulloffs

   N/A

6. Check torque stabilizers

   N/A

7. Check ladder/step bolts

   G

8. Check safety climb

   X - TOP MOUNT OF SAFETY CLIMB IS BROKE. CABLE WAS WRAPPED AROUND A LADDER RUNG AND TWO CROSBYS ARE ATTACHED.

9. Check lightning rod

   X LIGHTNING ROD IS MOUNTED LOWER THAN 2-WAY ANT.

10. Check foundations (grout, settling, cracks)

    G

11. Check galvanized surfaces

    G

12. Check tower grounding system

    G

[2] TOWER SUPPORT SYSTEMS – N/A

1. TOWER PLUMBNESS

Check with transit. Plumb must be checked from two points approximately 90 degrees apart.

Set up transit for positon 1., sighting across two faces of the tower; this position will allow you to verify the amount of tower twist.

Set up transit for position 2., behind an anchor 90 degrees to the position 1.

Align the vertical crosshair with the outside leg edge as close to the base as possible and observe the deviation from plumb throughout the total tower height.

The distance the vertical hair is off to the left or right of the outside edge of the leg shall be measured and the amount of deviation at each guy point recorded. (In inches and fractions of inches using 1/8" segments.)

GUY LEVEL

Lowest Guy	Transit Position 1 Vertical Hair		Transit Position 2 Vertical Hair		Transit Position 1 **Final**		Transit Position 2 **Final**	
	Left	Right	Left	Right	Left	Right	Left	Right
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

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MAINTENANCE/INSPECTION REPORT

(4A)

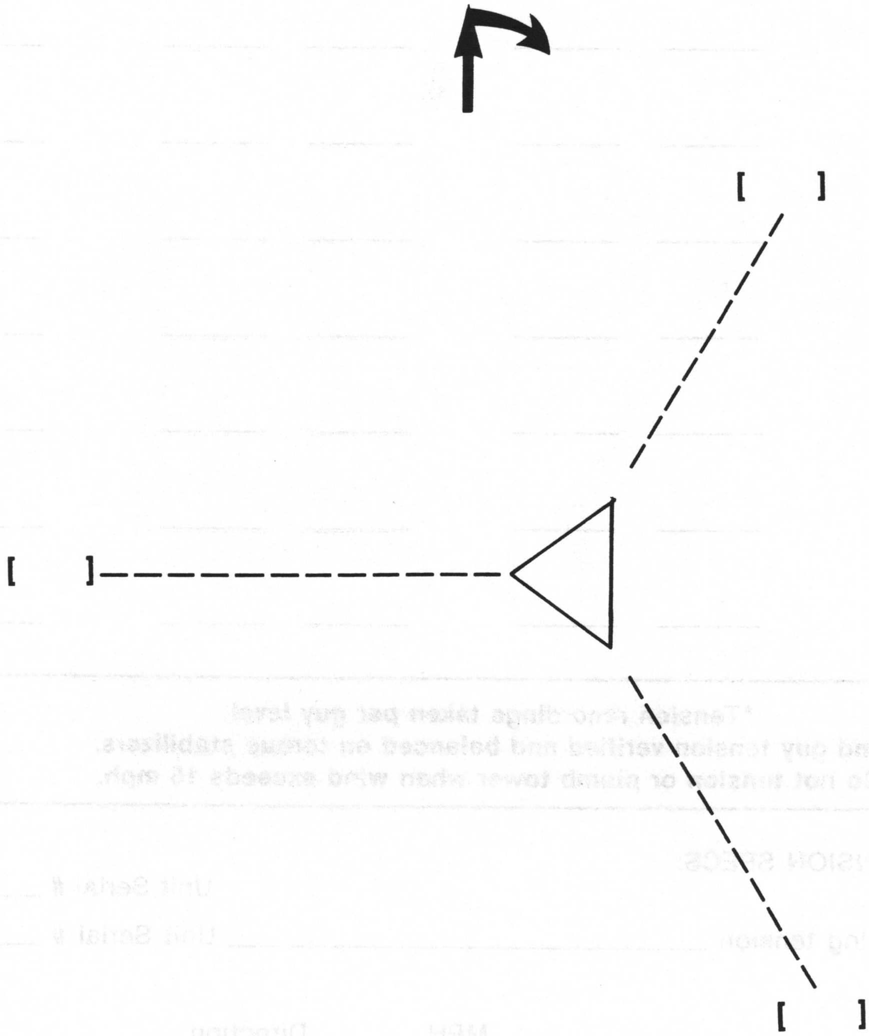
[2] TOWER SUPPORT SYSTEMS - N/A

1. TOWER PLUMBNESS

A). Record the amount and direction of **twist**.

B). Draw a sketch locating

1. **Transit** set up positions and note (Pos. I) and (Pos. II)
2. **Magnetic North**
3. **Building** to Tower relation
4. **Anchors** noted clockwise from "N"



[2] TOWER SUPPORT SYSTEMS – N/A

[2] GUY TENSIONS

TENSIONS:		Guy Level Guy Size	Guy "A" Actual/Final		Guy "B" Actual/Final		Guy "C" Actual/Final	
	1.							
	2.							
	3.							
	4.							
	5.							
	6.							
	7.							
	8.							
	9.							

***Tension recordings taken per guy level.**
2nd guy tension verified and balanced on torque stabilizers.
Do not tension or plumb tower when wind exceeds 15 mph.

[ ] TENSION SPECS:

Unit Serial # ______

Method used for determining tension ______ Unit Serial # ______

Ground wind velocity ______ MPH Direction ______

Outside air Temperature ______ degrees Fahrenheit

Weather Conditions ______

Reason tension/plumb not completed ______

______

[2] TOWER SUPPORT SYSTEMS – N/A

[3/4] GUY ATTACHMENTS/ANCHORS

1. Describe condition and type of connection hardware

   1. ________ Preform ____________________
   2. ________ Fist Grip ____________________
   3. ________ Crosby Clamp ____________________
   4. ________ Other ____________________
   5. ________ Thimbles ____________________
   6. ________ Shackles ____________________
   7. ________ Sockets ____________________
   8. ________ Other ____________________
   9. ________ Turnbuckles ____________________

2. Check cotter pins/locking nuts are secured

   ____

3. Check for adequate reserve thread on turnbuckles

   ____

4. Check safety wire passes through turnbuckle centers and eyes/jaws

   ____

5. Check guy hardware and guy strands for corrosion

   ____

6. Check guy tails for unravelling

   ____

7. Check guy anchors

	Inner:			**Outer:**		
	"A"	**"B"**	**"C"**	**"A"**	**"B"**	**"C"**
1. ________ Flat bar						
2. ________ Rod						
3. ________ "[" Channel						
4. ________ "][" Channel						
5. ________ Weldment (Caisson)						

8. Check backfill condition

   ____

9. Anchor heads for clearance above grade

   ____

[2] TOWER SUPPORT SYSTEMS – N/A

[5/6] ANCHOR GROUNDING/PAINTING

1. Check anchor ground connections

2. Check guy wire ground connections

3. Record type of connections

"A" Inner/Outer **"B" Inner/Outer** **"C" Inner/Outer**

4. Check anchor fences/guard posts

5. Record Type of fences/guard posts

"A" Inner/Outer **"B" Inner/Outer** **"C" Inner/Outer**

[3] PAINTING

1. Check number of color bands

7

2. Check paint condition

G

3. Record color

RED – WHITE

[4] SITE:

1. Check access road condition
X- OVERHANGING LIMBS ON ROAD. (REPAIRED)

2. Check access gate/s condition
N/A

3. Check shelter/building fence condition and Record size
G SEE PAGE 12

4. Check general shelter/building condition and Record size
G.

5. Check general site condition
G- SOME PLANT LIFE GROWING INSIDE COMPOUND

[5] ELECTRICAL

		Beacon	Sidelight/s
1. Relamped	Yes	✓	✓
	No		

2. Record Bulb Manufacturer/Type
DUROTEST 600W/120V - BEACON DUROTEST 116W/120V - O.B. LIGHTS

3. Check Operation of lights and control
G

4. Record unit type/manufacturer
CROUSE-HINDS 44914-A

5. Check beacon physically for damage and condition
X- INSIDE LENS (RED) ARE CRACKED: TOP & BOTTOM. H&P 300M KG-114 TYPE F
TIGHTENED LOOSE BULB SOCKET.

6. Check sidelights physically for damage and condition
G

7. Check conduit/junction boxes for damage
G

8. Check support system for damage
G

[6] WAVEGUIDE

Check and record Waveguide types

	Type:	Type Number:	Number Runs:	Condition:
1.	Eliptical			
2.	Rigid	3"	3	G
3.	Co-axial	AND. LDFS-50A	1	G

4. Flex Sections at antennas/record quantity

Antenna:

Quantity/Type:

5. Check for correct spacing

G

6. Check waveguide support system

X- SEVERAL LOOSE BUTTERFLIES ON COAX – REPAIRED

7. Check waveguide bridge

G

8. Check building entry/ports

G

9. Check pressurization/leaks

G

10. Check ice protection on waveguide

G

11. Check bullet protection on waveguide

N/A

12. Check waveguide grounding system

N/A

Waveguide

Top: **Bottom:** **Other:**

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[7] ANTENNAS

Check and record antenna types.

	Size/Type:		Parabolic Azimuth	Height:	Horn:	R/flrs:	2/Ways:	Stiffarms:
1.	10'	UHR-10	330.4°	150'	GAB			2
2.	10'	UHR-10	143.0°	251'	GAB			2
3.	6'	UHR-6	56.8°	251'	GAB			
4.	20'	DB420B		263'			DECIBEL	
5.								
6.								
7.								
8.								
9.								
10.								

5. Check mounts/hardware

X- MISSING BOLTS ON 150' MOUNT.

6. Check stiffarms

G

7. Check ice protection

Antenna:	Ft:	Az:	Feedhorn:	Ft:	Az:

8. Check Antenna grounding at antenna

N/A

[8] GENERAL NOTES (NOTE ALL ITEMS CORRECTED OR REQUIRING FURTHER ACTION)

1] All rusted areas zinc rich spray coated [   ] cans used.

[1] TOWER STRUCTURE

8.) SAFETY IS BROKE AT TOP.

9.) LIGHTNING ROD IS LOWER THAN 2-WAY.

[4] SITE

1.) REMOVED OVERHANGING LIMBS FROM ROAD.

[5] ELECTRICAL

5.) RED FILTERS IN BEACON ARE CRACKED.

[6] WAVEGUIDE

6.) TIGHTENED SEVERAL LOOSE HANGERS ON COAX.

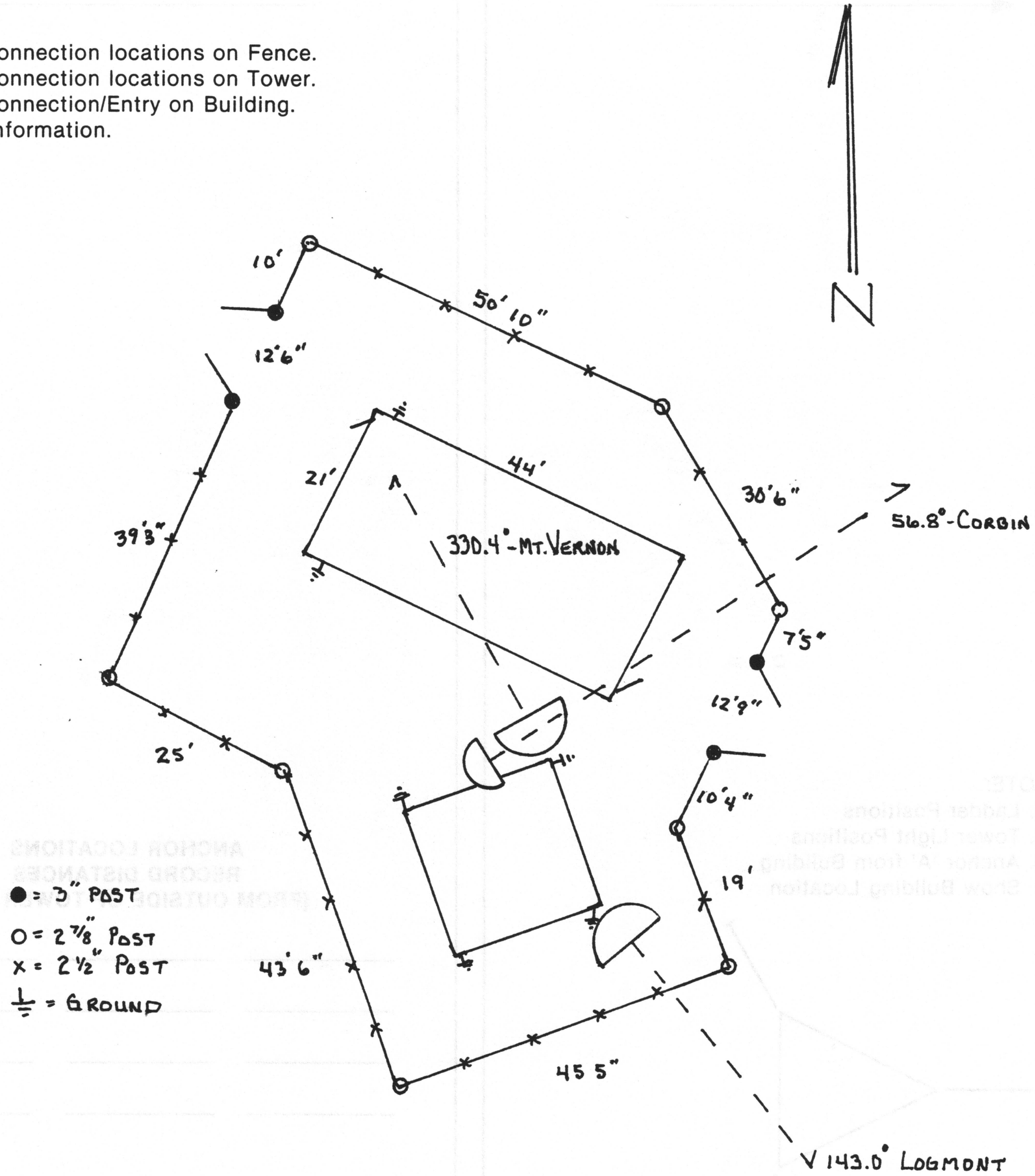
[7] ANTENNA

5.) MISSING BOLTS ON LOWER MOUNT.

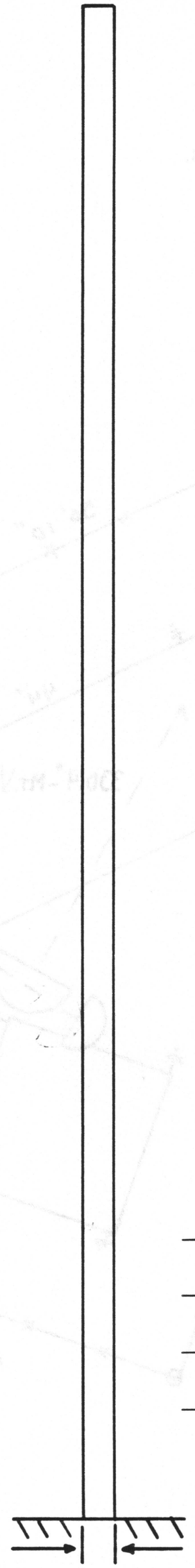
[9] SITE INFORMATION

Sketch fence area and record measurements.
Sketch building shape and record measurements.

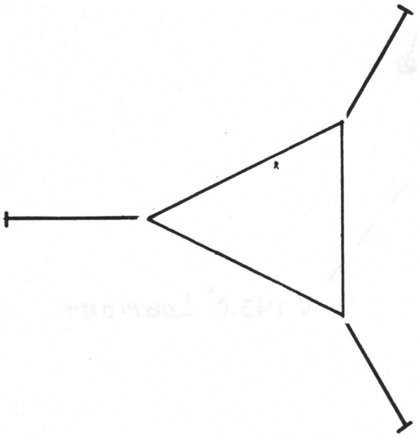
NOTE:
1] Ground Connection locations on Fence.
2] Ground Connection locations on Tower.
3] Ground Connection/Entry on Building.
4] General Information.


N
10'
12'6"
50' 10"
44'
21'
39'3"
330.4°-Mt.Vernon
38'6"
56.8°-Corbin
7'5"
12'9"
25'
1"
10'4"
19'
43'6"
45 5"
V 143.0° Logmont
● = 3" Post
O = 2 7/8" Post
x = 2 1/2" Post
⏚ = Ground

[10] **GUYED TOWER**
GUY AND ANTENNA LOCATIONS



NOTE:
1]. Ladder Positions
2]. Tower Light Positions
3]. Anchor 'A' from Building
4]. Show Building Location



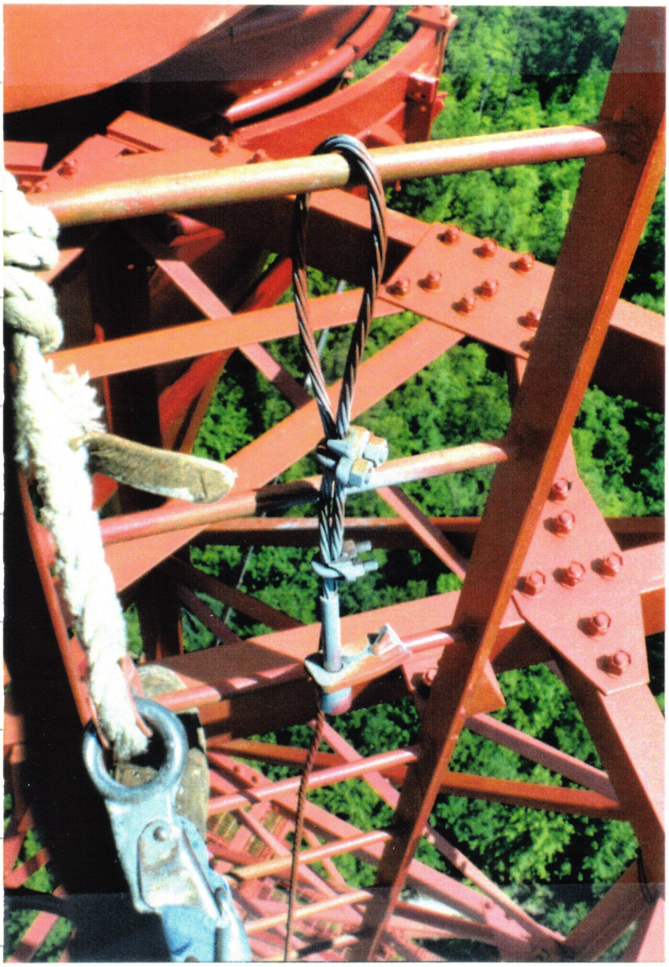
ANCHOR LOCATIONS
RECORD DISTANCES
[FROM OUTSIDE OF TOWER LEG]

	INNER	MID	OUTER
"A"			
"B"			
"C"			
"D"			

DISTANCE

[ ] INCHES

[11] SITE PHOTOGRAPHS



BROKEN SAFETY CLIMB.

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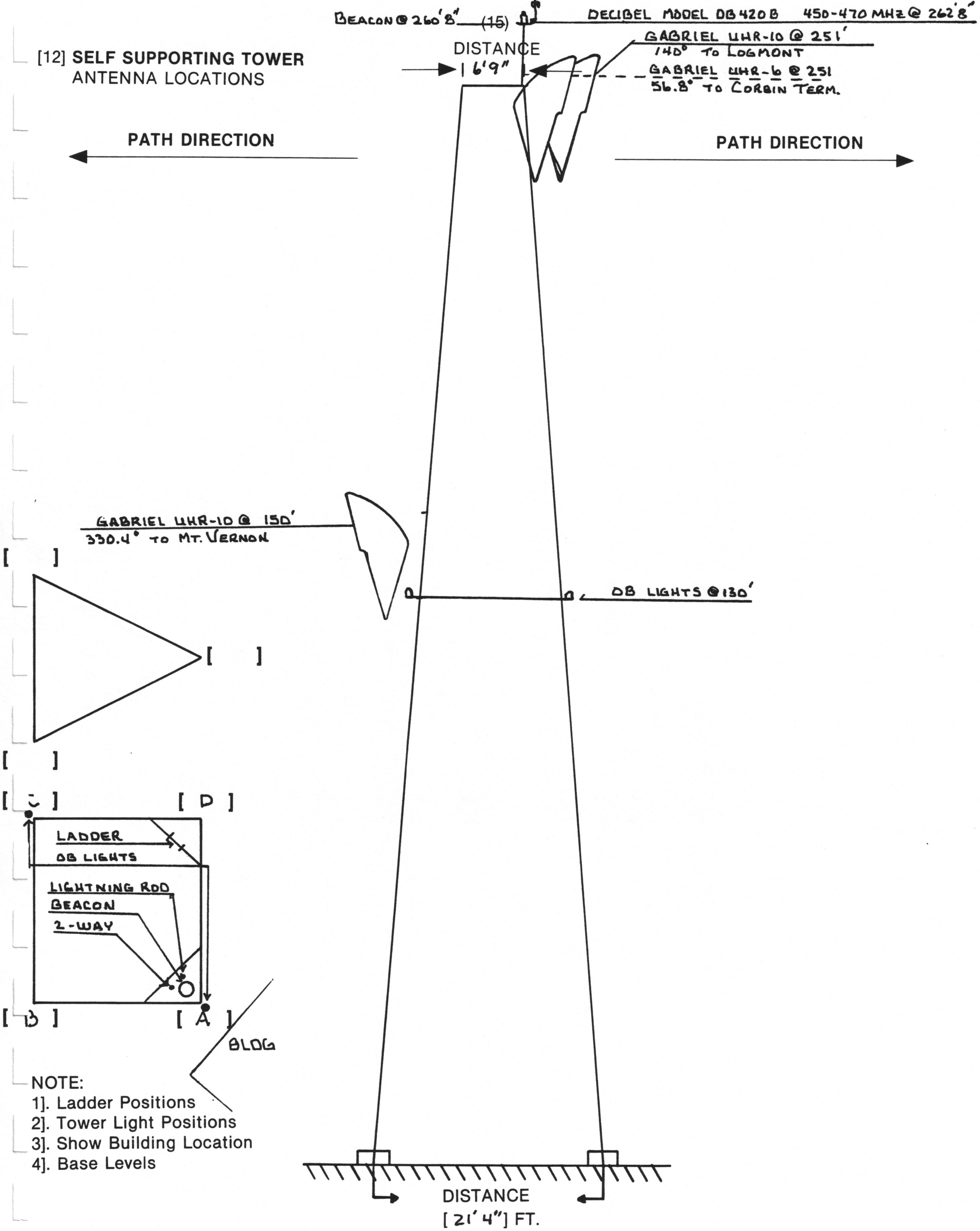
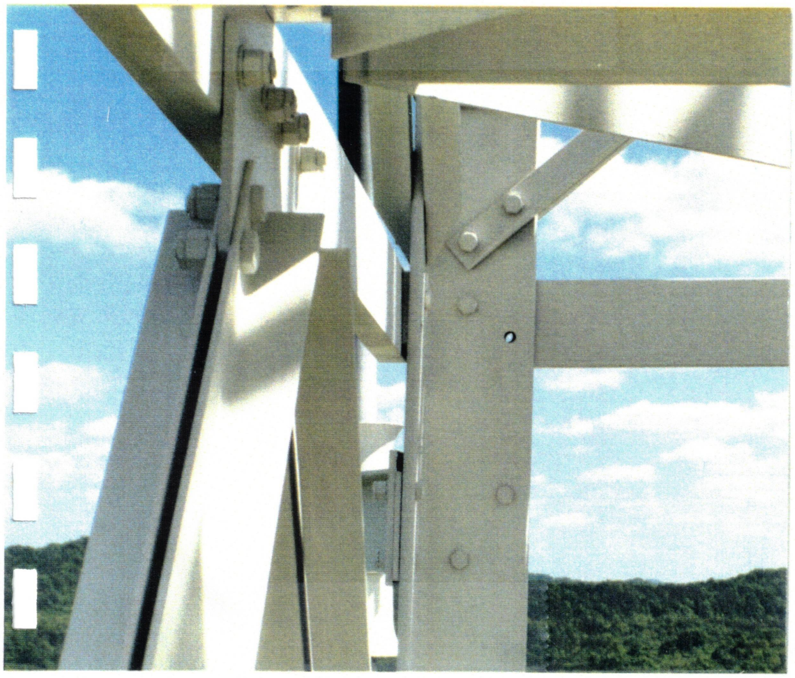
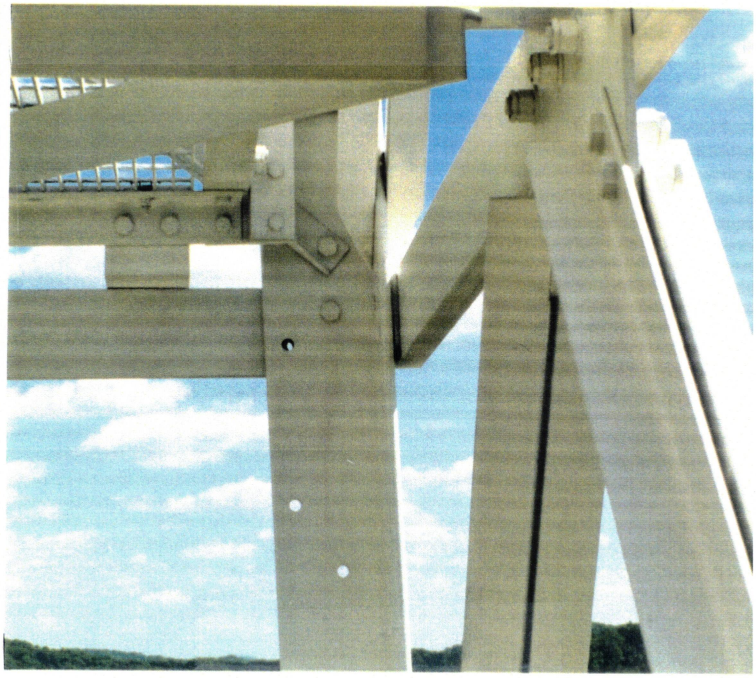
[12] SELF SUPPORTING TOWER
ANTENNA LOCATIONS

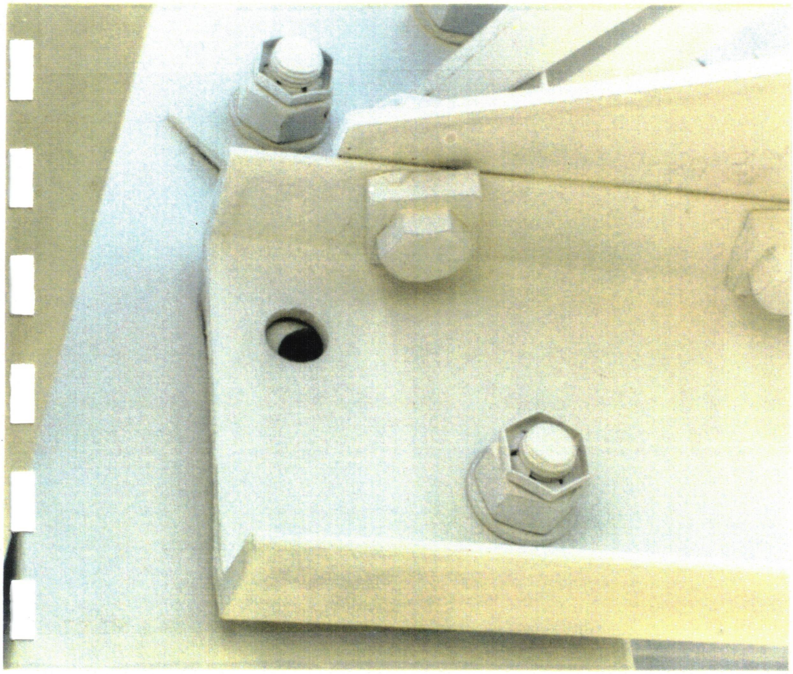

BEACON @ 260'8"
(15)
DECIBEL MODEL DB420B 450-470 MHz @ 262'8"
DISTANCE
6'9"
GABRIEL UHR-10 @ 251'
140° TO LOGMONT
GABRIEL UHR-6 @ 251
56.8° TO CORBIN TERM.
PATH DIRECTION
PATH DIRECTION
GABRIEL UHR-10 @ 150'
330.4° TO MT. VERNON
DB LIGHTS @130'
[ ]
[ ]
[ ]
[C]
[D]
LADDER
DB LIGHTS
LIGHTNING ROD
BEACON
2-WAY
[B]
[A]
BLDG
DISTANCE
[21' 4"] FT.

NOTE:
1]. Ladder Positions
2]. Tower Light Positions
3]. Show Building Location
4]. Base Levels

[13] SITE PHOTOGRAPHS - MISSING BOLTS ON LOWER MOUNT







[14] GROUND MEG TESTING

EQUIPMENT:

AEMC CLAMP-ON GROUND RESISTANCE TESTER MODEL 3700

IF MORE THAN 2AMP CURRENT FLOW IN GROUND DO NOT PROCEED WITH GROUND RESISTANCE TEST

SITE: ______________________ STATE: ______________________

DATE: ______________________ TESTER: ______________________

WEATHER: ______________________ SITE TERRAIN: ______________________

PROBE LOCATION:	**CURRENT READINGS:**		**OHMS READINGS:**
1. MAIN GROUND TO BUILDING	_____	AMPS	0
2. TOWER BASE --- (LEG A)	_____	AMPS	2.39
3. TOWER BASE --- (LEG B)	_____	AMPS	8.66
4. TOWER BASE --- (LEG C)	_____	AMPS	3.02
TOWER BASE ---(LEG D)			2.41
5. FENCE -- (CORNER)	_____	AMPS	_____
6. FENCE -- (CORNER)	_____	AMPS	_____
7. ANCHORS -- ("A" INNER)	_____	AMPS	_____
("A" OUTER)	_____	AMPS	_____
("B" INNER)	_____	AMPS	_____
("B" OUTER)	_____	AMPS	_____
("C" INNER)	_____	AMPS	_____
("C" OUTER)	_____	AMPS	_____

NOTES

[15] RECOMMENDATIONS/ACTION REQUIRED

1) REPAIR SAFETY CLIMB AND LIGHTNING ROD.
2) REPAIR BEACON
3) REAM OUT HOLES AND REPLACE MISSING BOLTS IN LOWER MOUNT.

[16] SITE PHOTOGRAPHS